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United States
Department of
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Soil
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Idaho

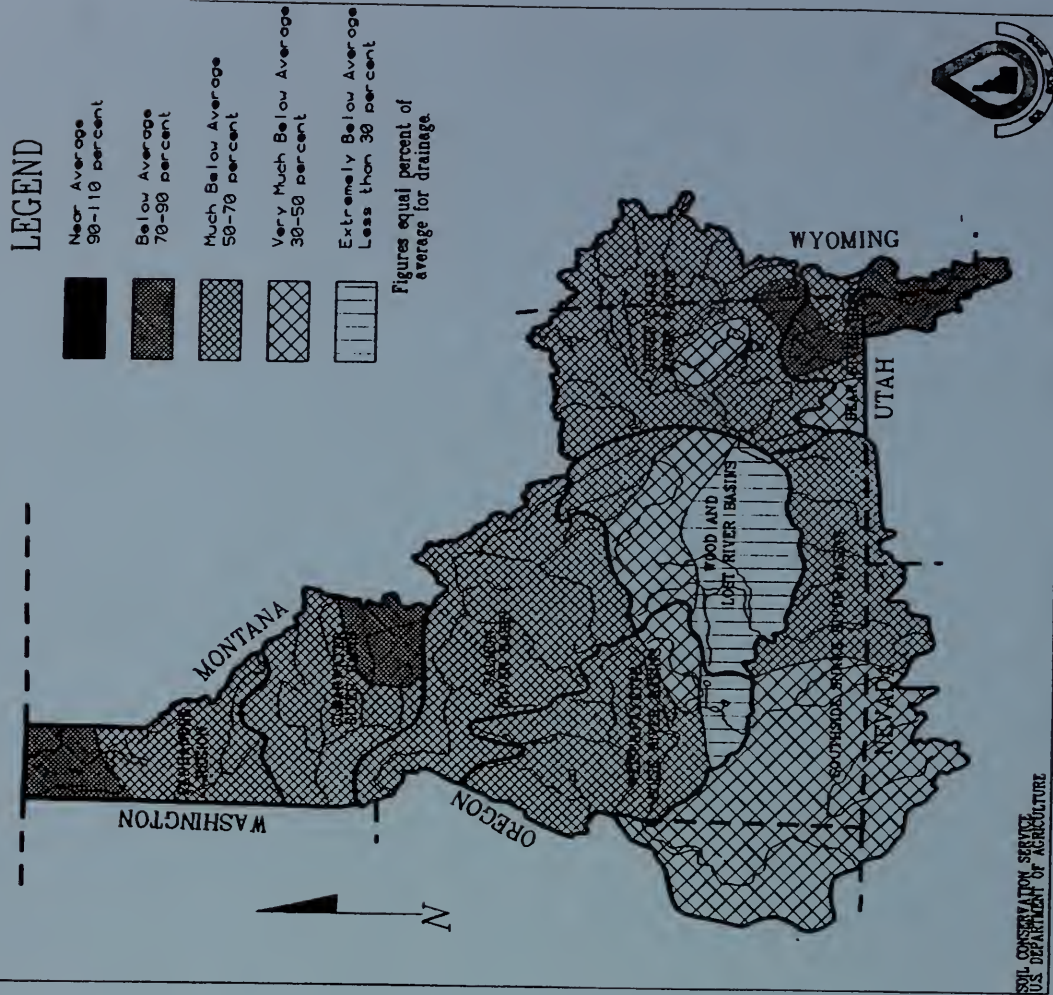
Basin Outlook Report

April 1, 1994



IDAHO MOUNTAIN SNOWPACK
APRIL 1, 1994





IDAHO WATER SUPPLY OUTLOOK REPORT

APRIL 1, 1994

SUMMARY

March snowfall was disappointing across Idaho, and snowpacks remain well below normal throughout the state. Some central mountain watersheds reported the driest March on record, leading to near record low snowpacks for April 1. Concerns about an adequate water supply are increasing in many areas. Streamflow forecasts call for much below normal runoff volumes across the entire state this summer with some forecasts near record minimum. Reservoir supplies will help ease the fears of many irrigators this year, but the ongoing drought continues to take its toll on dryland agriculture, forest health, grazing, fish and wildlife, and other water related interests.

SNOWPACK

March snowfall was below normal statewide, leaving snowpacks throughout Idaho at only 50-70% of average for April 1. Some basins are reporting near record minimum snowpacks, including the St. Joe, NF Clearwater, Salmon, Wood, Lost, and SF Boise. April 1 is typically when the peak snow accumulation occurs for the season. A cool wet spring is now needed to improve soil moisture conditions and augment the expected low runoff from the meager mountain snowpack.

PRECIPITATION

March precipitation was below normal throughout the state. Northern and southeastern Idaho received the most precipitation: SNOTEL sites in the Panhandle, Clearwater, and Bear River basins reported 60 to 80% of average for the month. Some watersheds in the central mountains reported the driest March on record: the Boise basin received 17% of average while the Wood and Lost basins reported only 14% of average. Some SNOTEL sites and valley weather stations reported no precipitation at all during the month. April typically begins a drying trend that continues through the summer months. A cool, wet spring is needed to improve soil moisture conditions for agriculture, forest health, and grazing conditions throughout the state.

RESERVOIRS

Reservoir storage will help ease water supply concerns for some irrigators, however, shortages are still expected in portions of southern and central Idaho. Last year's abundant moisture left us with good carryover storage in many reservoirs. The upper Snake reservoirs are currently 91% of capacity, virtually assuring an adequate water supply for most Snake River water users. The Payette basin is also in excellent shape (67% of capacity, 123% of average), and a full water supply is expected in that area. The Boise system reports 65% of capacity, the best carryover storage since 1987. The record dry March, however, raises concerns about the water supply in the Boise basin: some junior water right holders may come up short this year. Most reservoirs in the Panhandle region are lower than normal due to the dry winter and spring. The big concern statewide is next year: carryover storage will probably be minimal at the end of this irrigation season. Water users should practice conservation measures this year to help provide some "insurance" for 1995.

Note: SCS reports reservoir information in terms of usable volumes, which includes both active, inactive, and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in the back of this report.

STREAMFLOW

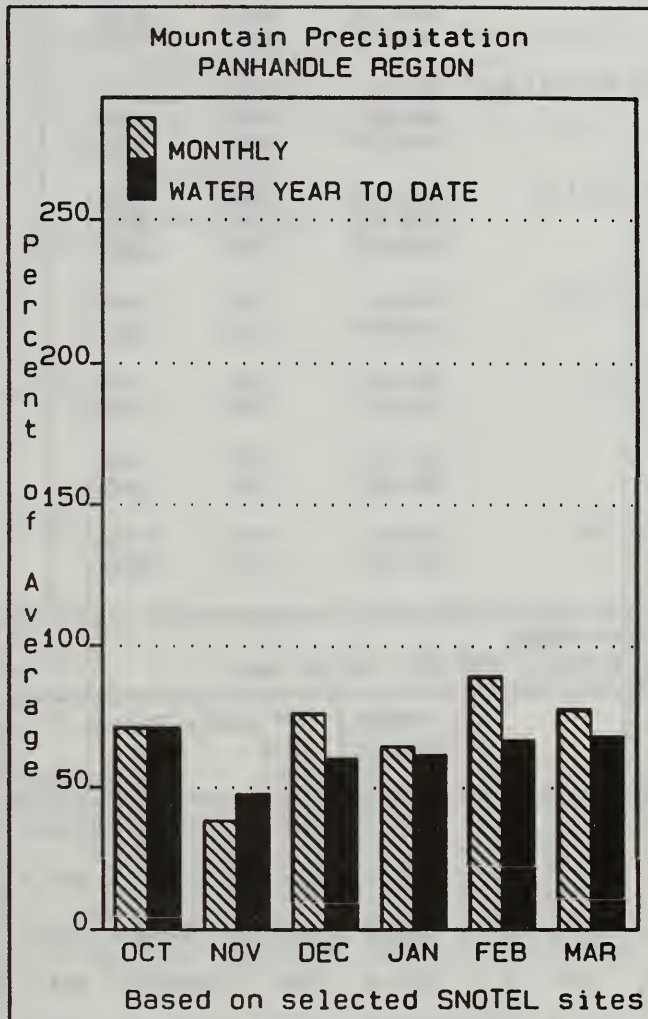
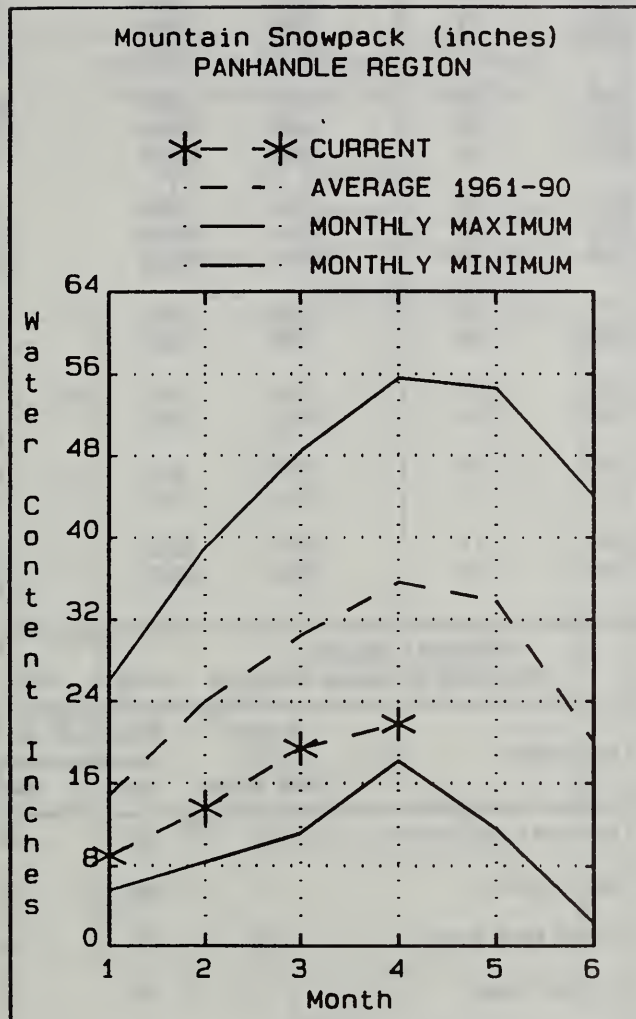
March streamflow continued the pattern established last fall: all areas of the state were below normal for the month. Warm weather at the beginning and end of the month caused some rises in streamflow, but the low snowpacks and lack of precipitation kept these flows below normal. As a result, reservoir storage is increasing slower than normal. With near record low snowpacks in some areas, forecasts for the coming season's runoff have decreased significantly from last month's already discouraging levels. With few exceptions, forecasts call for just 30 to 60% of average seasonal runoff volumes. The Henrys Fork and upper Snake basins are forecast to produce 60 to 70% of average, the highest figures in the state. Despite good carryover storage from last year in many impoundments, the extremely low streamflow projections indicate that water supplies could be marginal this year in many areas. Basins without reservoir storage could experience summer low flow conditions as much as a month earlier than normal.

RECREATION OUTLOOK

Snowpacks are below normal throughout the state, and river runners can expect lower than normal peak flows and a shorter period of high water. Northern Idaho streams will probably see a much shorter season than usual. Streamflows should be adequate in the Salmon basin for river running, but Middle Fork floaters will have to use downstream launch points earlier in the season than usual. Southwestern desert rivers (the Jarbidge and Bruneau) will have a short and early season this year. The Owyhee has already had its snowmelt peak, and only heavy rainfall will produce normal rafting flows this year. The Payette and Snake Rivers will have an excellent season due to abundant reservoir storage. Reservoir users in southern Idaho should expect an early drawdown as irrigation demands tap this important resource. Forest users should be very careful with camp fires as the potential for an extreme fire season exists. All in all, the recreation outlook is positive in spite of the below normal snowpack conditions.

PANHANDLE REGION

APRIL 1, 1994



WATER SUPPLY OUTLOOK

March brought less than normal precipitation to the Idaho Panhandle (78% of average), and consequently snowpack conditions dropped slightly from last month. Currently, snowpacks range from 55 to 65% of average in the area. The St. Joe and Spokane basins report the 2nd and 3rd lowest snowpacks since 1961, respectively. Streamflow forecasts reflect these low numbers and call for only 50 to 70% of normal flows. Reservoirs are fairly low for this time of year due to the dry winter and spring. No significant water shortages are expected in the Idaho Panhandle, but dryland farming, forest health, and related concerns will feel the effects of the dry conditions this year.

PANHANDLE REGION
Streamflow Forecasts - April 1, 1994

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
KOOTENAI at Leonia (1,2)	APR-JUN	3290	4050	4390	77	4740	5490	5701
	APR-JUL	4150	5090	5520	77	5950	6890	7199
	APR-SEP	4770	5860	6350	77	6840	7930	8275
CLARK FK at Whitehorse Rpds (1,2)	APR-JUN	4270	5690	6330	63	6970	8390	10050
	APR-JUL	4930	6590	7340	63	8090	9750	11730
	APR-SEP	5430	7250	8080	63	8910	10700	12910
PEND OREILLE Lake Inflow (1,2)	APR-JUN	4220	5940	6720	59	7500	9220	11390
	APR-JUL	5110	6930	7760	59	8590	10400	13150
	APR-SEP	5600	6890	7800	54	8710	11400	14370
PRIEST nr Priest River (1,2)	APR-JUL	345	490	553	68	620	760	814
	APR-SEP	370	520	590	68	660	810	868
COEUR D'ALENE at Enaville	APR-JUL	315	400	454	59	510	615	770
	APR-SEP	285	420	480	59	540	690	809
ST.JOE at Calder	APR-JUL	470	575	643	55	715	815	1169
	APR-SEP	460	600	670	54	740	930	1237
SPOKANE near Post Falls (2)	APR-JUL	910	1170	1350	51	1530	1840	2633
	APR-SEP	820	1220	1400	51	1580	2050	2730

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of March

PANHANDLE REGION
Watershed Snowpack Analysis - April 1, 1994

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNGRY HORSE	3451.0	811.8	699.0	2046.0	Kootenai ab Bonners Ferry	21	100	69
FLATHEAD LAKE	1791.0	616.0	642.0	751.9	Moyie River	1	108	59
NOXON RAPIDS	335.0	264.0	322.8	231.3	Clark Fork River	72	94	63
PEND OREILLE	1561.3	562.7	620.8	813.7	Priest River	4	104	73
COEUR D'ALENE	238.5	105.5	225.5	170.1	Pend Oreille River	110	98	68
PRIEST LAKE	119.3	58.6	54.0	61.2	Rathdrum Creek	3	50	52
					Hayden Lake	2	87	79
					Coeur d'Alene River	11	83	60
					St. Joe River	6	84	56
					Spokane River	19	78	60
					Palouse River	2	27	24

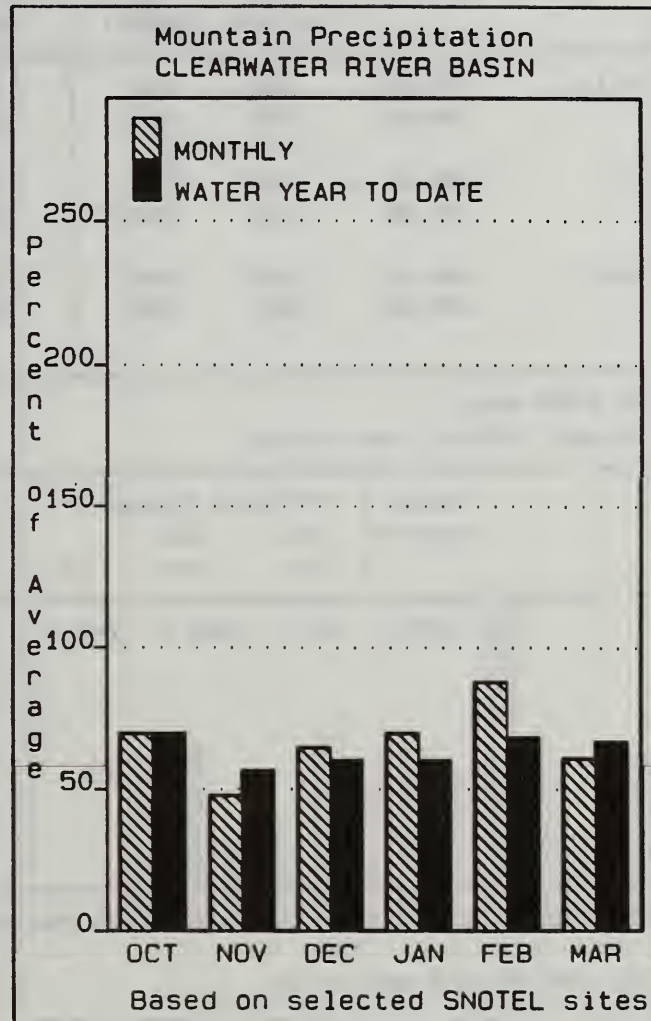
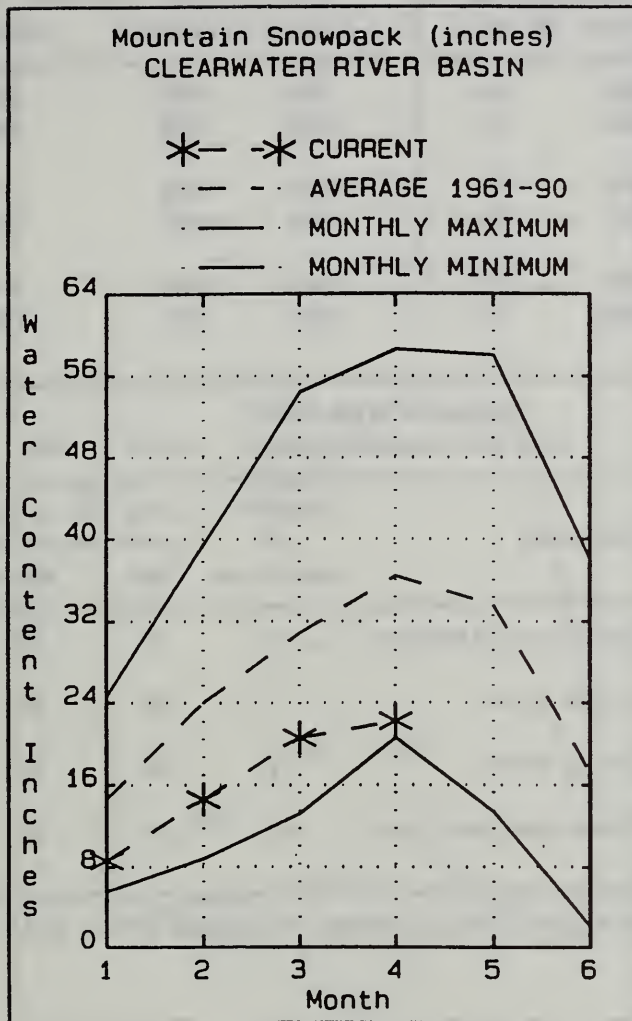
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

CLEARWATER RIVER BASIN

APRIL 1, 1994



WATER SUPPLY OUTLOOK

March was another dry month in the Clearwater basin, bringing only 61% of average precipitation to the watershed. Snowpacks are down about five percentage points from last month and range from 60 to 70% of average. The snowpack in the NF Clearwater basin is one of the lowest on record since 1961. Streamflow forecasts continue to call for well below normal flows, ranging from 50 to 55% of average. Dworshak Reservoir is 77% full (134% of average) and should help alleviate the low flows in the Clearwater River.

SALMON RIVER BASIN
Streamflow Forecasts - April 1, 1994

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
SALMON at Salmon (1)	APR-JUL	169	385	480	55	575	790	869
	APR-SEP	197	445	560	55	675	925	1019
SALMON at White Bird (1)	APR-JUL	1860	2820	3250	55	3680	4640	5956
	APR-SEP	2090	3150	3630	55	4110	5170	6602

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of March

SALMON RIVER BASIN
Watershed Snowpack Analysis - April 1, 1994

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					Salmon River ab Salmon	11	58	52
					Lemhi River	10	86	66
					Middle Fork Salmon River	3	56	51
					South Fork Salmon River	3	58	53
					Little Salmon River	4	63	58
					Salmon Basin Total	31	67	58

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

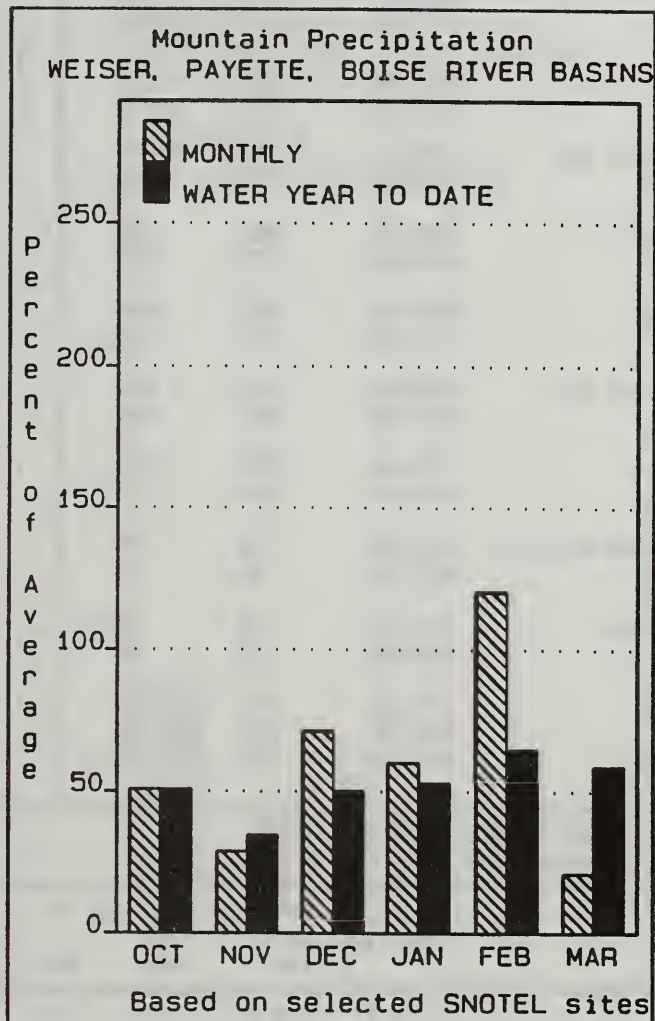
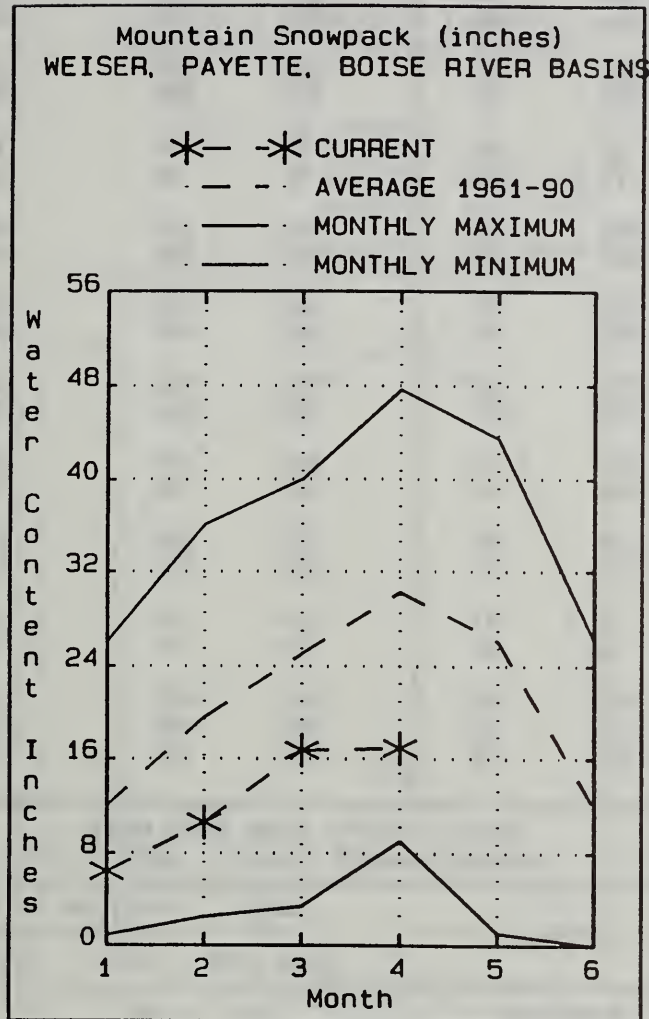
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WEISER, PAYETTE, BOISE RIVER BASINS

APRIL 1, 1994



WATER SUPPLY OUTLOOK

This March was one of the driest on record in the west central mountains, elevating concerns about an already short water supply. SNOTEL sites in the area reported only 21% of average precipitation for the month. Consequently, snowpack figures dropped from last month and now range from only 50 to 60% of average. Streamflow forecasts have also dropped and now call for 48% of average flow for the Weiser, 45% for the Payette, and 40% for the Boise. Good reservoir carryover storage will ensure an adequate water supply in the Payette basin. The Boise basin reservoirs are 65% full (103% of average). The lack of precipitation during March raised concerns about the water supply in the Boise River basin: some junior water right holders may come up short this year if the dry trend continues. All water users should practice conservation measures this year to help maintain some carryover for 1995. Contact your local SCS office for more specific information on getting the most out of limited water supplies.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - April 1, 1994

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
WEISER nr Weiser (1)	APR-JUL	12.0	129	184	48	240	360	386
	APR-SEP	12.0	141	199	48	255	385	415
SF PAYETTE at Lowman	APR-JUL	185	220	245	57	270	305	432
	APR-SEP	215	260	285	58	310	355	488
DEADWOOD RESERVOIR Inflow (2)	APR-JUL	41	59	66	49	73	90	135
	APR-SEP	53	64	71	50	78	89	143
NF PAYETTE nr Cascade (2)	APR-JUL	165	220	255	51	290	345	496
	APR-SEP	170	230	267	50	305	365	533
NF PAYETTE nr Banks (2)	APR-JUL	183	260	310	51	360	435	607
	APR-SEP	196	280	335	49	390	475	690
PAYETTE nr Horseshoe Bend (2)	APR-JUL	495	635	728	45	825	960	1618
	APR-SEP	525	680	785	45	890	1040	1755
BOISE near Twin Springs	APR-JUL	215	295	330	52	365	450	631
	APR-SEP	280	325	365	53	405	485	686
SF BOISE at Anderson Rnch Dm (1,2)	APR-JUL	76	149	180	33	210	285	544
	APR-SEP	84	158	192	33	225	300	582
MORES CK nr Arrowrock Dam	APR-JUL	22	33	40	31	47	58	129
	APR-SEP	25	36	43	32	50	61	134
BOISE nr Boise (1,2)	APR-JUN	305	435	490	39	550	675	1264
	APR-JUL	335	500	575	40	650	815	1421
	APR-SEP	355	530	610	40	690	865	1535

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of March

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - April 1, 1994

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MANN CREEK	11.1	8.3	8.5	8.7	Mann Creek	2	62	62
CASCADE	703.2	473.2	362.7	377.6	Weiser River	5	65	61
DEADWOOD	161.9	102.7	62.8	90.8	North Fork Payette	8	63	58
ANDERSON RANCH	464.2	335.0	44.8	278.1	South Fork Payette	5	58	53
ARROWROCK	286.6	206.0	214.9	227.8	Payette Basin Total	14	62	58
LUCKY PEAK	293.2	135.7	162.0	153.2	Middle & North Fork Boise	7	60	59
LAKE LOWELL (DEER FLAT)	177.1	136.5	97.4	152.9	South Fork Boise River	9	42	45
					Mores Creek	5	60	61
					Boise Basin Total	17	52	53
					Canyon Creek	2	22	34

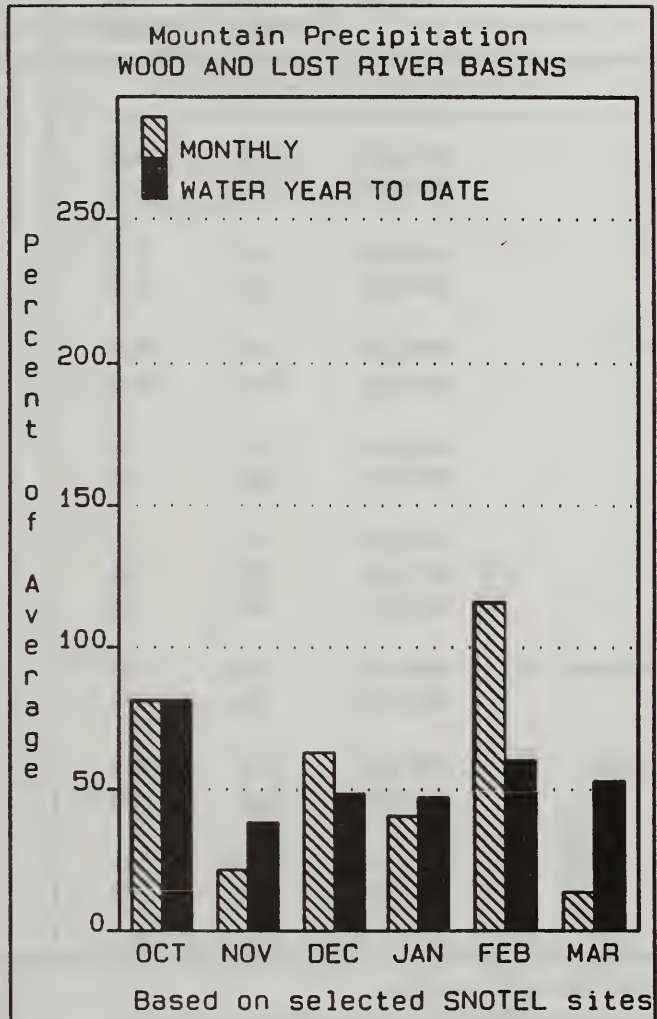
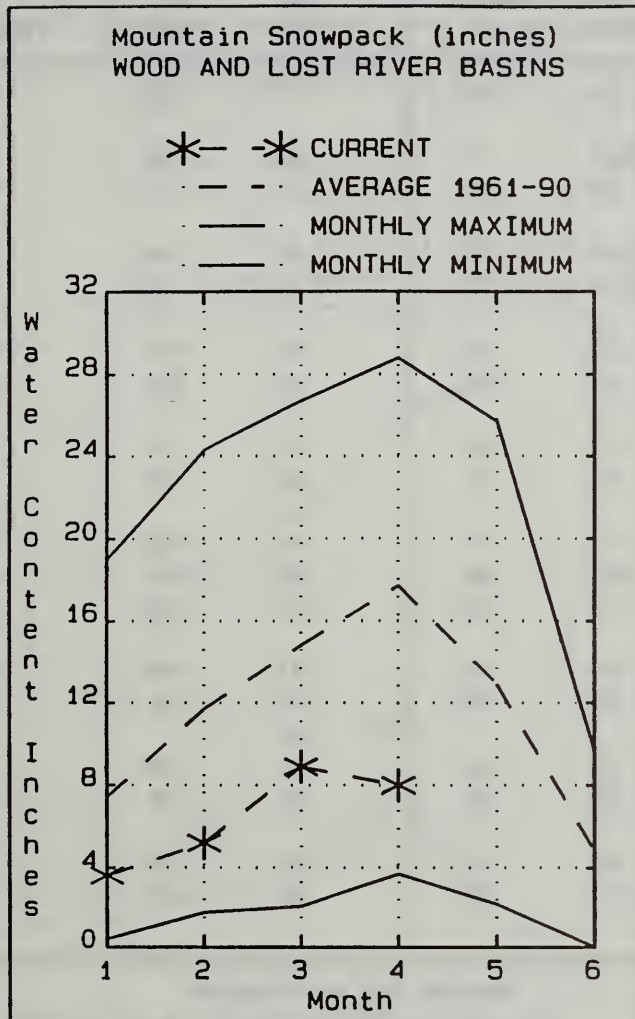
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WOOD and LOST RIVER BASINS

APRIL 1, 1994



WATER SUPPLY OUTLOOK

Central Idaho continues to be the focus of the ongoing drought of the last eight years. This March was one of the driest on record, with the Wood and Lost basin receiving only 14% of normal precipitation. Snowpack percentages dropped from last month and now range from 40 to 50% of average; lower elevation drainages are about 25% of average. The snowpack in the Wood and Lost basins is the second lowest on record; only 1977 had less snow than this year. Streamflow forecasts have also dropped: the Big Wood is expected to yield only 12% of average flow into Magic reservoir, and the Big Lost is forecast at only 49%. Reservoir storage is much better than last year at this time, but with the streamflow forecasts well below normal, water supply shortages are expected in the Big Wood and Big Lost basins. All water users are encouraged to keep in touch with their local irrigation districts for more specific information.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - April 1, 1994

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
BIG WOOD at Hailey	APR-SEP	29		92	32		143	286
BIG WOOD nr Bellevue	APR-JUL	12.0	19.0	16.0	9	36	66	183
	APR-SEP	12.0	19.0	21	11	42	74	197
CAMAS CK nr Blaine	APR-JUL	1.0	5.0	10.0	10	25	46	102
	APR-SEP	1.0	5.0	11.0	11	26	47	103
BIG WOOD blw Magic Dam (2)	APR-JUL	3.0	15.0	34	12	67	115	294
	APR-SEP	16.0	15.0	40	13	74	139	309
LITTLE WOOD nr Carey	APR-JUL	20	20	28	30	36	49	92
	APR-SEP	18.0	22	31	31	40	69	99
BIG LOST at Howell	APR-JUN	45	65	79	56	93	113	141
	APR-JUL	57	84	102	56	120	147	181
	APR-SEP	68	98	119	58	140	170	206
BIG LOST blw Mackay Reservoir (2)	APR-JUL	36	55	68	45	81	100	150
	APR-SEP	56	76	90	49	104	124	182
LITTLE LOST blw Wet Creek	APR-JUL	14.0	18.0	21	66	24	28	31
	APR-SEP	17.0	22	26	67	30	36	39
LITTLE LOST nr Howe	APR-JUL	18.0	21	23	70	25	28	33
	APR-SEP	23	27	30	70	33	37	43

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of March

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - April 1, 1994

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MAGIC	191.5	93.4	44.5	117.4	Big Wood ab Magic	8	47	48
LITTLE WOOD	30.0	29.5	22.2	18.4	Camas Creek	5	16	21
MACKAY	44.4	36.1	26.8	33.3	Big Wood Basin Total	13	38	42
					Little Wood River	4	39	41
					Fish Creek	3	26	26
					Big Lost River	7	42	43
					Little Lost River	4	53	51

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

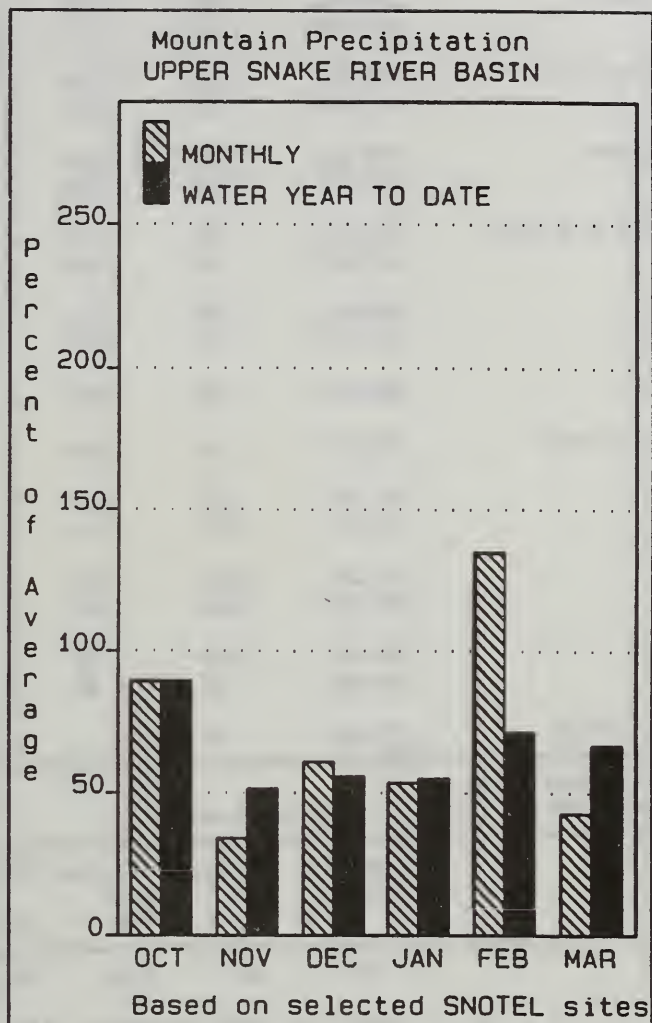
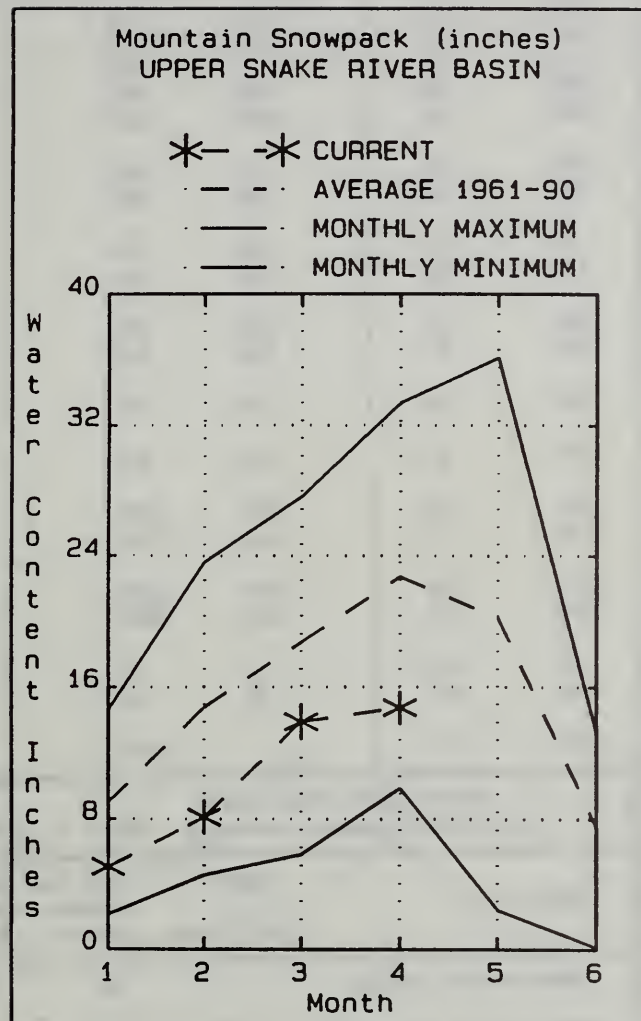
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UPPER SNAKE RIVER BASIN

APRIL 1, 1994



WATER SUPPLY OUTLOOK

Precipitation in the upper Snake basin was less than half of normal during March; consequently snowpacks dropped 5 to 10 percentage points from last month. March precipitation at Island Park was the second driest for the 55 years of record. Streamflow forecasts have taken a corresponding downturn and now call for 60 to 70% of average flows. The good news is the abundant reservoir storage in the basin (91% of capacity and 121% of average): last year's heavy snowpack and cool wet spring provided us with good carryover storage at the end of the irrigation season. Water users with access to reservoir storage may have just enough water to get by this year but conservation measures are encouraged. Dryland farmers, forest health, and other concerns dependent upon natural precipitation will be seriously impacted by the dry conditions, however, unless weather patterns change significantly during the spring.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - April 1, 1994

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
HENRYS FORK nr Ashton	APR-JUL	310	355	390	72	425	470	544
	APR-SEP	420	475	515	71	555	610	730
HENRYS FORK nr Rexburg	APR-JUL	635	730	800	65	870	965	1228
	APR-SEP	730	915	992	64	1070	1240	1551
FALLS RIVER nr Squirrel	APR-JUL	164	210	225	62	164	285	364
	APR-SEP	215	240	260	60	280	305	432
TETON abv S Leigh Ck nr Driggs	APR-JUL	62	82	95	62	108	128	153
	APR-SEP	86	110	126	63	142	166	199
TETON nr St. Anthony	APR-JUL	160	205	233	62	260	305	375
	APR-SEP	210	255	290	64	325	370	454
SNAKE nr Moran (1,2)	APR-SEP	415	520	565	65	610	715	869
SALT abv Reservoir nr Etna	APR-SEP	176	220	260	65	300	355	400
SNAKE nr Heise	APR-JUL	1530	1850	2060	60	2270	2590	3451
	APR-SEP	1780	2180	2430	60	2680	3240	4048
SNAKE nr Blackfoot	APR-JUL	1950	2400	2700	63	3000	3450	4281
	APR-SEP	2250	2740	3070	58	3400	3890	5268
PORTNEUF at Topaz	APR-JUL	18.0	28	35	49	42	52	72
	APR-SEP	25	38	46	49	54	67	93
AMERICAN FALLS RESV Inflow	APR-JUL	61		1130	37		2210	3066

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of March

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - April 1, 1994

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HENRYS LAKE	90.4	88.1	62.0	80.1	Camas-Beaver Creeks	4	54	53
ISLAND PARK	135.2	127.1	92.4	119.3	Henrys Fork River	12	74	69
GRASSY LAKE	15.2	13.6	13.2	11.2	Teton River	8	72	67
JACKSON LAKE	847.0	625.1	178.0	473.2	Snake above Jackson Lake	13	79	66
PALISADES	1400.0	1398.4	556.5	1013.5	Gros Ventre River	3	77	67
RIRIE	80.5	48.9	26.7	44.3	Hoback River	6	68	60
BLACKFOOT	348.7	205.5	63.2	260.7	Greys River	5	73	66
AMERICAN FALLS	1672.6	1665.0	1429.1	1452.5	Salt River	5	83	74
					Snake above Palisades	32	76	67
					Willow Creek	7	50	47
					Blackfoot River	5	59	53
					Portneuf River	6	62	62
					Snake abv American Falls	47	71	64

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

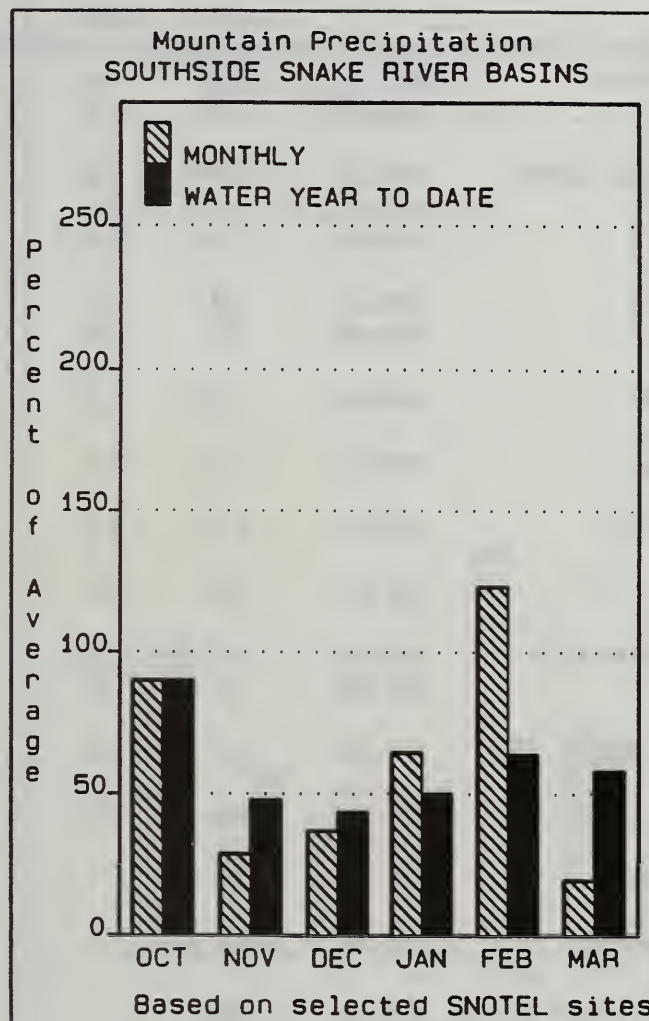
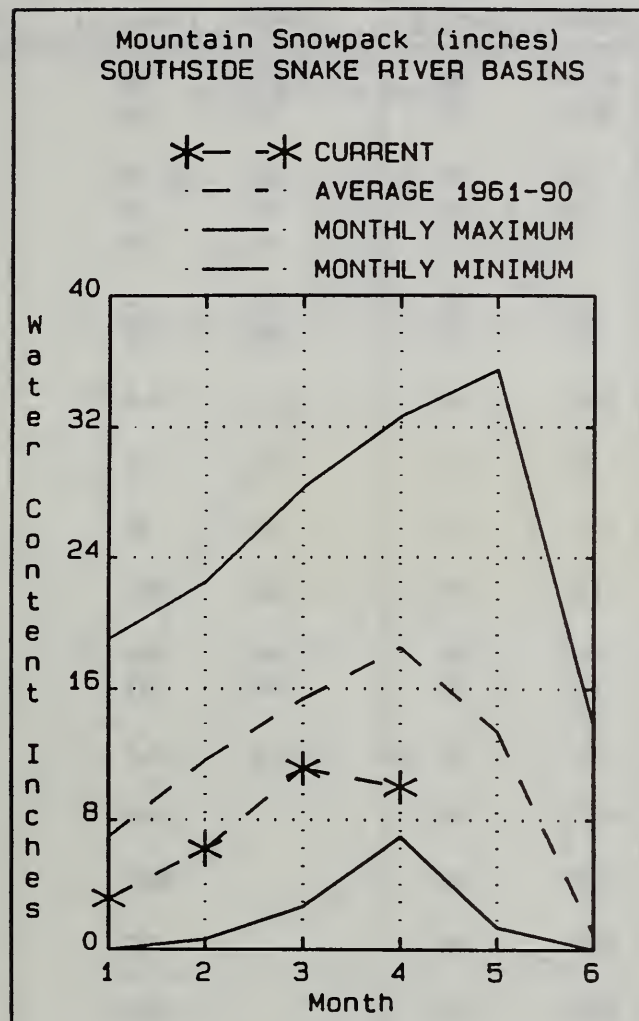
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS

APRIL 1, 1994



WATER SUPPLY OUTLOOK

Idaho's southern mountains experienced a very dry March; precipitation in the area was only 20% of average for the month. Consequently, snowpack figures dropped 10 to 20 percentage points over the month. Streamflow forecasts also decreased and now call for flows in the 30 to 50% of average range. The Owyhee River had its snowmelt peak with flows just over 1000 cfs for a few days in early March. Good reservoir storage in Owyhee Reservoir (70% of capacity) will help reduce possible shortages in that area. Reservoir storage is better than last year in both Salmon Falls and Oakley reservoirs; however, with streamflows forecast less than half of normal, water supply shortages are expected. Soils are very dry in the area; dryland farming and grazing will certainly feel the impacts this spring and summer. All water users are encouraged to keep in touch with their local irrigation districts for more specific information.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - April 1, 1994

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
OAKLEY RESERVOIR Inflow	APR-JUL	2.0	9.0	13.0	46	18.0	24	29
	APR-SEP	5.0	10.0	15.0	48	20	28	32
SALMON FALLS CK nr San Jacinto	APR-JUN	1.0	9.0	22	29	34	53	75
	APR-JUL	1.0	10.0	23	29	37	57	80
	APR-SEP	1.0	12.0	26	31	40	62	84
BRUNEAU nr Hot Spring	APR-JUL	23	61	86	41	111	149	209
	APR-SEP	22	66	93	42	120	177	221
OWYHEE nr Gold Ck (2)	APR-JUL	3.0	5.0	10.0	40	15.0	17.0	25
OWYHEE nr Owyhee (2)	APR-JUL	1.0	13.0	27	31	41	61	86
SF OWYHEE nr Whiterock	APR-JUL	6.0	9.0	15.0	19	29	50	78
OWYHEE nr Rome	APR-JUL	35	61	110	29	189	305	377
OWYHEE RESERVOIR Inflow (1,2)	APR-JUL	43	70	117	30	198	375	390
	APR-SEP	31	47	130	31	215	395	418
SUCCOR CK nr Jordan Valley	APR-JUL	0.1	2.8	5.4	56	8.0	11.8	9.6
SNAKE RIVER at King Hill	APR-JUL	840		1810	63		2750	2896
SNAKE RIVER near Murphy	APR-JUL	895		1900	64		2890	2980
SNAKE RIVER at Weiser	APR-JUL	930		2680	49		4430	5465
SNAKE RIVER at Hells Canyon Dam	APR-JUL	980		2960	48		4900	6129
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	6580	9960	11500	53	13000	16200	21650

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of March

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - April 1, 1994

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
OAKLEY	77.4	17.2	16.8	34.0	Raft River	6	46	55
SALMON FALLS	182.6	50.3	34.2	62.3	Goose-Trapper Creeks	6	47	54
WILDHORSE RESERVOIR	71.5	29.8	17.1	38.2	Salmon Falls Creek	6	57	52
OWYHEE	715.0	498.8	647.4	579.0	Bruneau River	8	51	44
BROWNLEE	1419.3	1346.9	1002.3	893.1	Owyhee Basin Total	20	44	41

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

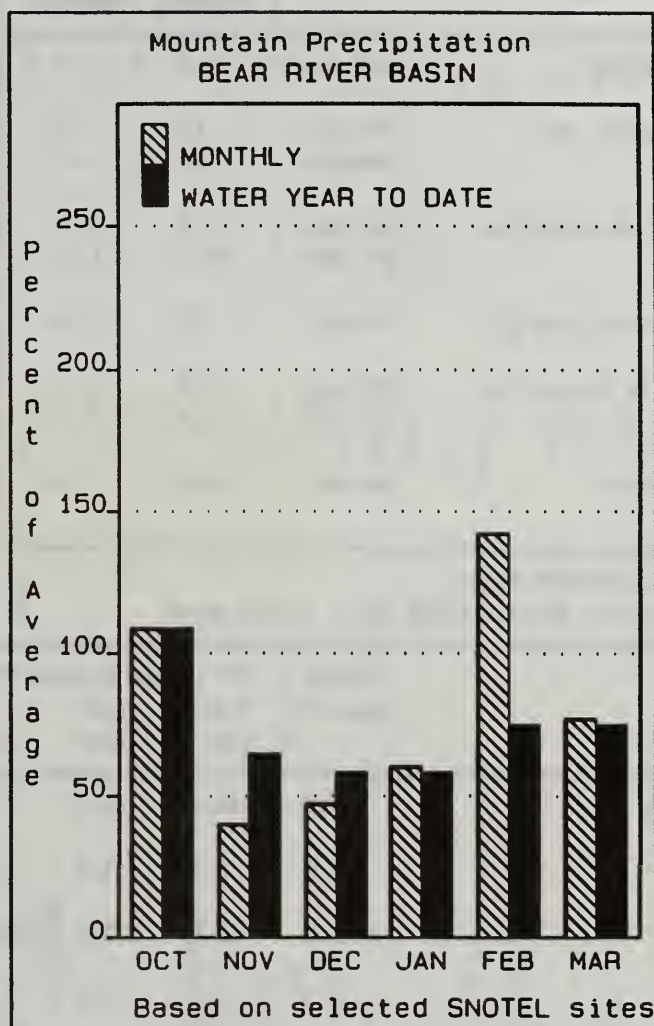
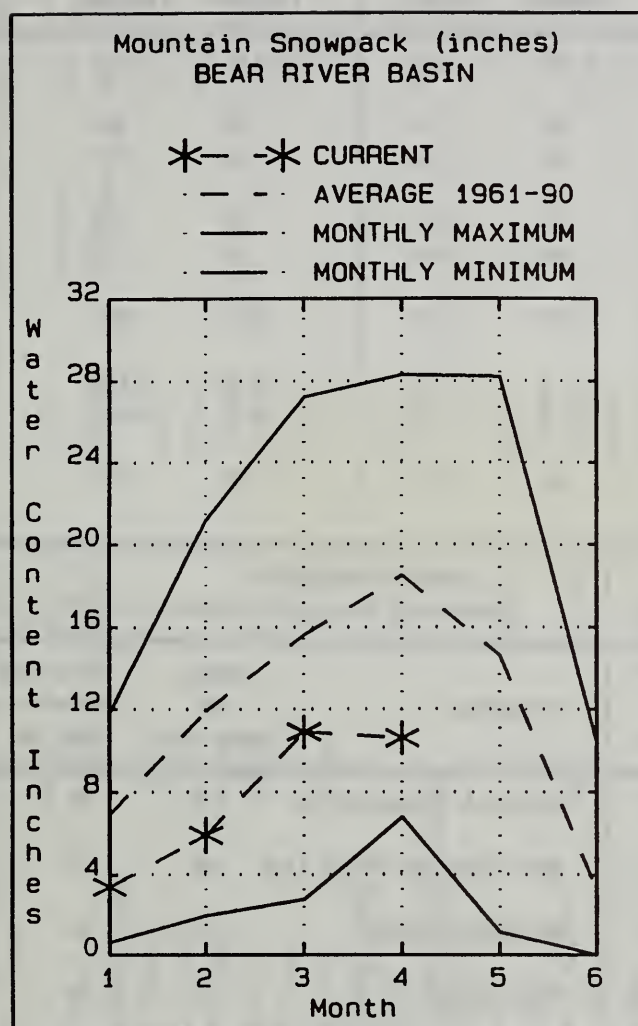
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

BEAR RIVER BASIN

APRIL 1, 1994



WATER SUPPLY OUTLOOK

Unlike February, March was a dry month in the Bear River basin with just 77% of normal precipitation. As a result of low precipitation and some snowmelt in the lower elevations, snowpack percentages dropped from last month. Currently, snowpacks range from 42% in the Malad basin to 75% in the Cub basin. Streamflow forecasts continue to call for below normal flows with the Bear River expected to yield only 59% of average runoff. Bear Lake continues to report well below normal storage (40% of capacity) even though the lake level is higher than last year. Dryland farming, grazing, and forest health will all feel the impacts of yet another dry water year. Soil moisture conditions are very dry, and only a very wet spring can improve conditions at this point.

BEAR RIVER BASIN
Streamflow Forecasts - April 1, 1994

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		90%		Chance Of Exceeding *		30%		
		(1000AF)	(1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	(1000AF)	(1000AF)	
BEAR RIVER nr Randolph	APR-JUL	1.0	49	84	64	119	170	131
SMITHS FORK nr Border, WY	APR-JUL	40	54	63	62	72	86	102
	APR-SEP	46	61	72	61	83	98	118
THOMAS FORK nr WY-ID Stateline	APR-JUL	9.0	16.0	20	61	24	31	33
	APR-SEP	10.0	17.0	22	61	27	34	36
BEAR RIVER blw Stewart Dam (2)	APR-SEP	77	136	175	59	215	275	298
MONTPELIER CREEK nr Montpelier	APR-JUL	3.0	5.4	7.0	57	8.6	11.0	12.2
	APR-SEP	2.9	5.6	7.5	53	9.4	12.1	14.2
CUB RIVER nr Preston	APR-JUL	19.0	24	28	60	32	37	47

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of March

BEAR RIVER BASIN
Watershed Snowpack Analysis - April 1, 1994

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
WOODRUFF NARROWS	57.3	44.6	24.3	---	Smiths & Thomas Forks	3	71	67
WOODRUFF CREEK	4.0	3.4	2.0	---	Bear River ab WY-ID line	10	70	71
BEAR LAKE	1421.0	566.5	272.2	1002.1	Montpelier Creek	2	64	57
MONTPELIER CREEK	4.0	2.8	1.1	1.6	Mink Creek	4	66	68
					Cub River	3	71	75
					Bear River ab ID-UT line	22	69	70
					Malad River	3	41	42

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
 + GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
 + TRAPPER CK NR OAKLEY, ID
 SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
 BRUNEAU R NR HOT SPRINGS, ID - No Corrections
 OWYHEE R NR GOLD CK, NV
 + WILDHORSE RESV (STORAGE CHANGE)
 OWYHEE R NR OWYHEE, NV
 + WILDHORSE RESV (STORAGE CHANGE)
 OWYHEE R NR ROME, OR
 + WILDHORSE RESV (STORAGE CHANGE)
 + JORDAN VALLEY RESV (STORAGE CHANGE)
 OWYHEE RESERVOIR INFLOW, OR
 + OWYHEE R BLW OWYHEE DAM, OR
 + OWYHEE RESV (STORAGE CHANGE)
 + DIV TO NORTH AND SOUTH CANALS
 SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
 SNAKE R - KING HILL, ID - No Corrections
 SNAKE R NR MURPHY, ID - No Corrections
 SNAKE R AT WEISER, ID - No Corrections
 SNAKE R AT HELLS CANYON DAM, ID
 + BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
 + SULPHUR CK RESV (STORAGE CHANGE)
 + CHAPMAN CANAL DIVERSION
 + WOODRUFF NARROWS RESV (STORAGE CHANGE)
 SMITHS FORK NR BORDER, WY - No Corrections
 THOMAS FORK NR WY-ID STATELINE - No Corrections
 BEAR R AT HARER, ID (Disc.)
 + SULPHUR CK RESV (STORAGE CHANGE)
 + CHAPMAN CANAL DIVERSION
 + WOODRUFF NARROWS RESV (STORAGE CHANGE)
 BEAR R BLW STEWART DAM, ID
 + SULPHUR CK RESV (STORAGE CHANGE)
 + CHAPMAN CANAL DIVERSION
 + WOODRUFF NARROWS RESV (STORAGE CHANGE)
 + DINGLE INLET CANAL
 + RAINBOW INLET CANAL
 MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID
 + MONTPELIER CK RESV (STORAGE CHANGE)
 CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS - Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. The table below lists these volumes for each reservoir in this report, and defines the storage volumes that SCS uses when reporting capacity and current reservoir storage. In most cases, SCS reports usable storage, which includes active and inactive storage.

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	SCS CAPACITY	SCS FIGURES INCLUDE
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD + INACTIVE + ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE + ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD + INACTIVE + ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2007.00	--	3459.0	INACTIVE + ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	50.00	653.20	--	703.2	INACTIVE + ACTIVE
DEADWOOD	1.50	--	161.90	--	161.9	ACTIVE
ANDERSON RANCH	29.00	41.00	423.18	--	464.2	INACTIVE + ACTIVE
ARROWROCK	--	--	286.60	--	286.6	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE + ACTIVE
LAKE LOWELL	--	8.00	169.10	--	177.1	INACTIVE + ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE + SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD + INACTIVE + ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	77.40	--	77.4	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE + ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD + ACTIVE

Streamflow Adjustment List For All Forecasts Published In Idaho Basin Outlook Report

Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and interbasin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report.

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
 + LAKE KOOCANUSA (STORAGE CHANGE)
 CLARK FORK AT WHITEHORSE RAPIDS, ID
 + HUNGRY HORSE (STORAGE CHANGE)
 + FLATHEAD LAKE (STORAGE CHANGE)
 + NOXON RAPIDS RESV (STORAGE CHANGE)
 PEND OREILLE LAKE INFLOW, ID
 + PEND OREILLE R AT NEWPORT, WA
 + HUNGRY HORSE (STORAGE CHANGE)
 + FLATHEAD LAKE (STORAGE CHANGE)
 + NOXON RAPIDS (STORAGE CHANGE)
 + PEND OREILLE LAKE (STORAGE CHANGE)
 PRIEST R NR PRIEST R, ID
 + PRIEST LAKE (STORAGE CHANGE)
 COEUR D'ALENE R AT ENAVILLE, ID - No Corrections
 ST. JOE R AT CALDER, ID - No Corrections
 SPOKANE R NR POST FALLS, ID
 + COEUR D'ALENE LAKE (STORAGE CHANGE)
 + RATHDRUM PRAIRIE CANAL AT HEUTTER, ID

Clearwater River Basin

DWORSHAK RESERVOIR INFLOW, ID
 + CLEARWATER R NR PECK, ID
 + DWORSHAK RESV (STORAGE CHANGE)
 - CLEARWATER R AT OROFINO, ID
 CLEARWATER R AT OROFINO, ID - No Corrections
 CLEARWATER R AT SPALDING, ID
 + DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections
 SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections
 SF PAYETTE R AT LOWMAN, ID - No Corrections
 DEADWOOD RESERVOIR INFLOW, ID
 + DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
 + DEADWOOD RESV (STORAGE CHANGE)
 NF PAYETTE R AT CASCADE, ID
 + CASCADE RESV (STORAGE CHANGE)
 NF PAYETTE R NR BANKS, ID
 + CASCADE RESV (STORAGE CHANGE)
 PAYETTE R NR HORSESHOE BEND, ID
 + DEADWOOD RESV (STORAGE CHANGE)
 + CASCADE RESV (STORAGE CHANGE)
 BOISE R NR TWIN SPRINGS, ID - No Corrections
 SF BOISE R AT ANDERSON RANCH DAM, ID
 + ANDERSON RANCH RESV (STORAGE CHANGE)
 MORES CK NR ARROWROCK DAM, ID - No Corrections
 BOISE R NR BOISE, ID
 + ANDERSON RANCH RESV (STORAGE CHANGE)
 + ARROWROCK RESV (STORAGE CHANGE)
 + LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections
 BIG WOOD R NR BELLEVUE, ID - No Corrections
 CAMAS CK NR BLAINE, ID - No Corrections
 BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
 + MAGIC RESV (STORAGE CHANGE)
 LITTLE WOOD R NR CAREY, ID
 + LITTLE WOOD RESV (STORAGE CHANGE)
 BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections
 Corrections
 BIG LOST R BLW MACKAY RESV NR MACKAY, ID
 + MACKAY RESV (STORAGE CHANGE)
 LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections
 LITTLE LOST R NR HOWE, ID (Disc) - No Corrections

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
 + HENRYS LAKE (STORAGE CHANGE)
 + ISLAND PARK RESV (STORAGE CHANGE)
 HENRYS FORK NR REXBURG, ID
 + HENRYS LAKE (STORAGE CHANGE)
 + ISLAND PARK RESV (STORAGE CHANGE)
 + DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
 + DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG,
 + GRASSY LAKE (STORAGE CHANGE)
 FALLS R NR SQUIRREL, ID
 + GRASSY LAKE (STORAGE CHANGE)
 TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections
 TETON R NR ST. ANTHONY, ID
 - CROSS CUT CANAL
 + SUM OF DIVERSIONS ABV GAGE
 SNAKE R NR MORAN, WY
 + JACKSON LAKE (STORAGE CHANGE)
 PALISADES RESERVOIR INFLOW, ID
 + SNAKE R NR IRWIN, ID
 + PALISADES RESV (STORAGE CHANGE)
 + JACKSON LAKE (STORAGE CHANGE)
 SNAKE R NR HEISE, ID
 + PALISADES RESV (STORAGE CHANGE)
 + JACKSON LAKE (STORAGE CHANGE)
 SNAKE R NR BLACKFOOT, ID
 + PALISADES RESV (STORAGE CHANGE)
 + JACKSON LAKE (STORAGE CHANGE)
 + DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
 + DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
 PORTNEUF R AT TOPAZ, ID - No Corrections
 AMERICAN FALLS RESERVOIR INFLOW, ID
 + SNAKE R AT NEELEY, ID
 + AMERICAN FALLS (STORAGE CHANGE)
 + PALISADES RESV (STORAGE CHANGE)
 + JACKSON LAKE (STORAGE CHANGE)

Interpreting Streamflow Forecasts

Introduction

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations. There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value. There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value. There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

10 Percent Chance of Exceeding Forecast. There is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March 1 and July 31.

Using the Higher Exceedance Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

UPPER HUMBOLDT RIVER BASIN									
FORECAST POINT	FORECAST PERIOD	← DRIER — FUTURE CONDITIONS — WETTER →					STREAMFLOW FORECASTS		
		Chance of Exceeding							
		80 % (1000AF)(1000AF)	70 % (1000AF)(1000AF)	50 % (Most Probable) (1000AF) (% AVG)	30 % (1000AF) (1000AF)	10 % (1000AF) (1000AF)	25 YR (1000AF)		
MARY'S RIVER nr Death	MAR-JUL	5.0	20.0	36	77	52	76	47	
	APR-JUL	8.0	17.0	31	74	45	67	42	
LAMOILLE CREEK nr Lamolle	MAR-JUL	6.0	16.0	24	79	32	43	31	
	APR-JUL	4.0	15.0	22	75	30	41	30	
NF HUMBOLDT RIVER at Devils Gate	MAR-JUL	6.0	12.0	43	73	74	121	59	

For more information concerning streamflow forecasting ask your local SCS field office for a copy of "A Field Office Guide for Interpreting Streamflow Forecasts".



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SOIL CONSERVATION SERVICE

In addition to basin outlook reports, a Water Supply Forecast for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 248, Portland, OR 97209-3489.